

### Abstract

Preferred embodiments of the present invention are directed to a system, method and apparatus for adaptively compressing and decompressing regions of an image depending on the properties of the uncompressed data regions. Preferred embodiments of the compression and decompression process of the present invention comprise a compression process and a decompression process, wherein the compression process comprises segmenting an image into a plurality of segments, analyzing each segment to determine an optimal compression technique, and compressing the segment in accordance with the chosen compression technique. After the optimal compression is applied to the segment, the segment is stored in computer memory and the compression process increments to the next segment of the image frame. Once the image stream has been processed, temporal compression is performed and the compressed image stream is stored for later use. When a user desires to view the compressed image data, each image is decompressed utilizing the complementary decoding techniques for each segment of each image. Upon decompression of each image, the results are displayed on a display device.

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